



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/551,330

09/29/2005

Naoya Ogata

AKA-0285

1543

23599

7590

07/29/2009

MILLEN, WHITE, ZELANO & BRANIGAN, P.C.

2200 CLARENDON BLVD.

SUITE 1400

ARLINGTON, VA 22201

EXAMINER

KALAFUT, STEPHEN J

ART UNIT

PAPER NUMBER

1795

NOTIFICATION DATE

DELIVERY MODE

07/29/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docketing@mwzb.com

Office Action Summary	Application No. 10/551,330	Applicant(s) OGATA ET AL.	
	Examiner Stephen J. Kalafut	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 May 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,5,7-10,12,13 and 19-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5,7-10,12,13 and 19-22 is/are rejected.
- 7) ☒ Claim(s) 1 and 2 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 1795

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 29 May 2009 and the amendment of 29 April 2009 have been entered.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-3, 5, 7-10, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ono *et al.* (JP 10-83,821) in view of Munshi (US 6,426,863).

Ono *et al.* disclose a polymer electrolyte made by reacting an imidazolium cation, a type of quaternary ammonium cation, with a monomer with a polymerizable function, such as polyvinyl sulfonamide. The imidazolium cation forms a compound with a halide anion, of which fluoride would be an obvious variety. See the abstract, lines 3-7. The resulting composition may also include a lithium salt such as LiTFSI (formula 5 in paragraph 0035), which contains fluorine its anion, and which would provide lithium ion conductivity. Ono *et al.* do not disclose an electrochemically inert polymer selected from polyvinylidene fluoride and a copolymer thereof. Munshi discloses a solid electrolyte comprising a base polymer, such as polyvinylidene fluoride (column 5, lines 6-12) used to retain (column 5, lines 35-38) and thus support the electrolyte, and an ionically conductive polymer formed *in situ* from a solution containing the base polymer and

Art Unit: 1795

a monomer or oligomer precursor (column 5, line 61 through column 6, line 2). See also column 10, line 58 through column 11, line 22. This results in both mechanical strength over “traditional ionomers” (column 11, lines 57-61) and good flexibility (column 4, lines 62-66). For this reason, it would be obvious to combine the polymer electrolyte of Ono *et al.* with the base polymer of Munshi. While Munshi discloses a capacitor, his teachings would be applicable to batteries, because of the concern for ionic conductivity, and his use of materials known to be used in lithium batteries (column 6, lines 43-51). While the ionically conductive polymer is formed in situ, recitations of how the polymer was made, such as by heat or radiation, are treated under product-by-process practice. See MPEP 2113 and the cases cited therein.

Claims 12, 13, 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ono *et al.* in view of Munshi as applied to claims 1 and 19 above, and further in view of Gan *et al.* (US 6,759,170).

These claims differ from the above combination by reciting certain salts as a component of the electrolyte composition. Gan *et al.* disclose a lithium ion cell, and teach various lithium salts as being well known as useful for transporting alkali metal ions between two electrodes (column 6, lines 54-61). Because the cell of Ono *et al.* is of the same lithium ion type as Gan *et al.*, as seen in an embodiment containing lithium ions (paragraph 0036), it would be obvious to use the salts disclosed by Gan *et al.* in the electrolyte of Ono *et al.*, used with the matrix polymer of Munshi, who also discloses lithium salts (column 5, lines 40-45). Gan *et al.* also teach various anodes and cathodes (column 4, lines 3-19).

Art Unit: 1795

Claims 1 and 2 are objected to because of the following informalities: In claim 1, line 6, a space is needed between “materials” and “comprising”. In claim 2, “comprizing” should be “comprising”. Appropriate correction is required.

Applicant's arguments with respect to claims 1-3, 5, 7-10, 12, 13 and 19-22 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen J. Kalafut whose telephone number is 571-272-1286. The examiner can normally be reached on Mon-Fri 8:00 am-4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Application/Control Number: 10/551,330

Page 5

Art Unit: 1795

/Stephen J. Kalafut/

Primary Examiner, Art Unit 1795